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Multi-level research into the social: an old wine in an old forgotten bottle?

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Abstract

This essay provides a cursory discussion on the issue of how to conceptualise social phenomena in terms of the multiple levels that characterise it. It recognises the nested nature of different levels and the challenges of integrating or aligning different levels, whether it be from a qualitative or a quantitative perspective. In response it is proposed that a complexity approach, whereby the complexity of a situation is unfolded to reveal multiple levels offers a useful approach for handling multi-level perspectives. In doing so, it draws upon an old model which has perhaps been in the main, forgotten: the Viable System Model (VSM) developed by Stafford Beer

Introduction

It is not uncommon that research takes as its unit of analysis a social entity (e.g. individual) or assortment of similar entities (i.e. member of a specified population) in isolation or within ‘context’, and assumes a simple relationship between the entity(ies) and this context (Hitt, Beamish, Jackson & Mathieu, 2007). In contrast, the everyday language of social organisation reveals the manifestly multilevel nature of social organisation (e.g. individual, family, gender, business, industry, region, country and population). This creates the conceptual challenge of how to explain the myriad of effects that influence, shape or regulate any entity and its interaction with other entities. In other words, how to necessarily conceptualise the complex interplay between the different levels (Rousseau, 1985; House, Rousseau & Thomas-Hunt, 1995; Hitt, Beamish, Jackson & Mathieu, 2007; Klein & Kozlowski, 2006).

This paper presents an interpretation of an old acclaimed theoretical model (Stafford Beer's Viable System Model (VSM)), which appears forgotten, yet, aside from its analytical power, has utility as an instrument in terms of how it is used, and thus stimulate discussion about issues relating to multi-level research concerning organisation.

Literature appraisal

The need to conduct research that embraces multiple levels to understand a phenomenon is not new within the social sciences and, in particular, organisational studies. For example, Karagozoglu & Brown (1986) advocate the need to examine, not only five 'hierarchical' levels, from government to individual, but also how they interact in order to understand how innovation comes about. This introduces the notion that layers are nested (Klein & Kozlowski, 2000a; Hitt, Beamish, Jackson & Mathieu, 2007) or embedded (Berends, van Burg & van Raaij, 2011). Further, one challenge arises when attempting to measure phenomena at different levels (Rousseau, 1985). For example, measurement issues arise when considering the nature of lower level units and whether they are homogenous, independent, or heterogeneous members of the higher level unit (Klein, Dansereau & Hall, 1994). In response, Rousseau (1985) presents a typology of how to combine different levels of analyses, drawing attention to the danger of aggregating a measure of a given level, with the assumption that aggregation can represent a unit at a higher level, and also of mis-specification, when an attribute of one level is ascribed to another level. Thus, an aggregated tendency need not be linked to an individual tendency, rather that the relationship between levels is non-isomorphic (Bliese, Chan & Ployhart, 2007), with perhaps emergent properties arising as a result of the complex interplay of lower level entities (Kozlowski, Chao, Grand, Braun, Kuljanin, 2013). The added complexity of a multi-level approach requires that attention is given, not only to research design (i.e. what data to consider and how to collect), but also to how to theorize about the respective levels and any generalizations, as well as how to analyze the data (Rousseau, 1985). However, these studies draw primarily attention to the challenges of measurement and multi-level analysis in the quantitative domain.

In contrast, multi-level studies in the qualitative domain appear to have less contention and are descriptively and theoretically rich (Kozlowski, Chao, Grand, Braun, Kuljanin, 2013). Nevertheless, simple three layered views in the form of macro-, meso-, micro-, can be made, offering a simple approach to distinguishing between studies at the level of the individual,

organization and institution, as illustrated in Jarzabkowski & Spee's (2009) review of the strategy-as-practice field. Moreover, such studies may use metaphor as a device to bridge different levels. For example Pollock & Williams (2008) introduce the photographic metaphor of the zoom-lens to handle their multiple levels of analysis. In contrast, Geel's (2002) studies of technological change over time (transitions) draws the distinction between niches, regimes, and landscapes, this resonating with a Macro-Meso-Micro perspective of multiple layers.

An alternative conceptual explanation

An alternative approach is grounded in the notion of isomorphism (House, Rousseau & Thomas-Hunt, 1995) whereby each level has similar generic features, though their manifestation may vary (i.e. are discontinuities). This usefully can be applied which each level is viewed as comprising sub-systems and existing with a meta-system. This conceptualization of multiple levels in terms of systems is well established (Klein & Kozlowski, 2000b). When the notion of isomorphism is applied in the context of multi-level systems, then there is a shift from multi-levels being viewed as nested and hierarchical, which are not isomorphic, to that of recursion, for which isomorphism is a necessary criterion, that the generic manner in which units in each level function are identical. This interpretation is consistent with the view of recursion expounded by Stafford Beer and Raul Espejo, which manifests in Beer's Viable System Model (Beer, 1972, 1979, 1981, 1984, 1985; Espejo and Harnden, 1989). This contrasts with the notion of recursion presented by Giddens (1984) and Jarzabkowski (2004), which is used in the sense of the recurring interplay between actors and activities, which each reconstitute and are reconstituted by each other.

Thus, recursion is defined here as a recurring feature of the organisation of a social entity in that irrespective of the level of analysis, each entity shares the same principles of regulation. This invokes that if the same manifestation of regulation occurs at each level then there is like to be a distribution of discretion throughout the recognised organisational elements, with each level having a degree of autonomy, including those entities at the lowest level (i.e. the individual). This recursive view of regulation contrasts with notions of hierarchy, which invokes the notions of control by edict, responsibility and accountability, but without discretion (Espejo, 1992). This reveals an imbalance in the distribution of discretion, with those without discretion, which invokes notions of power.

The VSM provides an analytical instrument to systemically evaluate how regulatory (or governance) mechanisms are both horizontally and vertically distributed in the organisation of organisational complexity. Each system (primary activity), irrespective of its position or level, has five regulatory mechanisms specific to that system: co-ordination, monitoring, control, intelligence and policy (Figure 1). Control, here need not imply a unilateral imposition of an edict, but can arise from an exchange agreement with the actors, whereby actors have discretion, by taking responsibility for what they do. The interplay between intelligence and control provides an adaptation mechanism. Regulatory effects are not confined to the specific system, but transmit between levels. Moreover, each system engages with outside, particularly through the intelligence function, this outside constituting the entity's environment. Thus, there is a myriad of possible connections with what is going on outside. The effectiveness of any entity to regulate itself, particularly in a turbulent environment, will be determined by the effectiveness of each of the regulatory mechanisms as distributed throughout the entity's organisation. Thus, the VSM enables the mapping of regulation throughout the entity, in other words, the level of discretion each level has to manage its own affairs. This notion that regulation can provide a bridge between levels appears in discussions about the relations between different levels. For example, Karagozoglu & Brown (1986: 16) state "Identification of... at each level helps reveal the nature of the co-ordination problems and the self-regulatory behavior of the system".

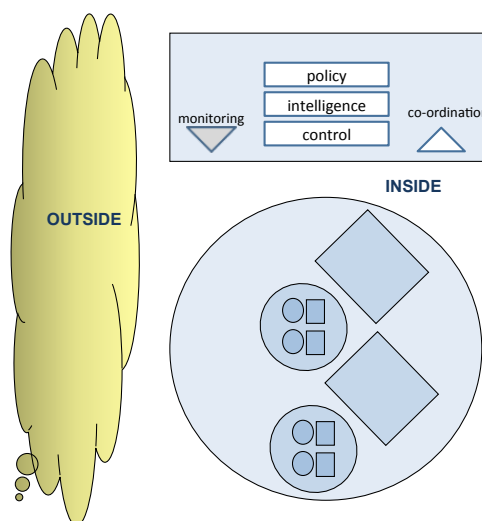


Figure 1 A simple model of the VSM demonstrating three levels of recursions. The square represents the regulation, comprising five regulatory mechanisms, of its corresponding primary activity (circle). Each entity interacts with its pertinent outside.

However, whilst Stafford Beer explained the model at great length in his publications, he provided little insight into how it could be used. Methodological guidance has been provided in a number of publications by Raul Espejo, of which Espejo, Bowling, & Hoverstadt (1999) and Espejo (2008, 2011) are useful examples. One of the stages in the analysis of a complex situation is the ‘unfolding of complexity’ of the situation. This enables the multiple levels to be revealed and thus the distribution of discretion to be evaluated. The following two case-studies provide examples of the issues relating to use of the VSM and its utility as a multi-layer model, breaking with the tradition of referring to multiple levels as macro-, meso- and micro-. Instead, levels are those that are identified in everyday language and emerge as the outcome of negotiations about the names selected to represent the different entities, with names establishing the basis for that which is included and that which excluded.

Cases-studies

Two case studies are presented that illustrate the multi-level nature of analysis. The first provides an insight into a more conventional view of organisation, focusing upon a production line, drawing upon the names in use. As an example, it reveals the complex interplay between the need to give entities a degree of discretion in terms of what is done, yet operate within policies imposed from above. The second case provides an insight into the challenges of establishing an appropriate organisational entity that represents local tourism business interests. It draws attention to boundary issues and with it the implications about the level ascribed.

Cases 1: a production facility

The first case reveals how everyday names that describe the organisation of a company with subsidiaries and production lines are used to unpack the complexity of an organisation. A simple model of the organisation of a production line is presented in Figure 2. It reveals the meta-level of a business engaged in production under the leadership of a Director who will have the discretion to make decisions relating to the business. The business has one or more production lines, these comprising of sections made up of workcentres. Each is managed by a manager, supervisor and operator respectively, with each having discretion with regard to decisions relevant to each level. The operator regulates how the workcentre functions, having discretion for example, about how to train others, plan workload and engage in process

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improvement activities, as well as being guided by a variety of instruments (e.g. Procedure, Specification), executed from elsewhere in the organisation. Attention focuses upon the primary activities of the business (i.e. those that accomplish the purpose of the company, which allows the unfolding of the complexity of the business to be revealed (Figure 3). This, thus allows the analysis of the entities of interest in terms of the distribution of discretion and the evaluation of the effectiveness of the functional mechanisms that underpin how the organisation functions. It reveals how company policy cascades down the levels to the level of practice. It can be used to evaluate whether levels have the requisite variety (Ashby, 1963) to deal with quality problems, such as quality; how empowered operators are to deal with quality issues, engage in kaizen practices and whether mechanisms exist to enable the escalation of unresolved issues in a manner that resolves them. An application of the VSM in a production context is presented in Harwood (2011).

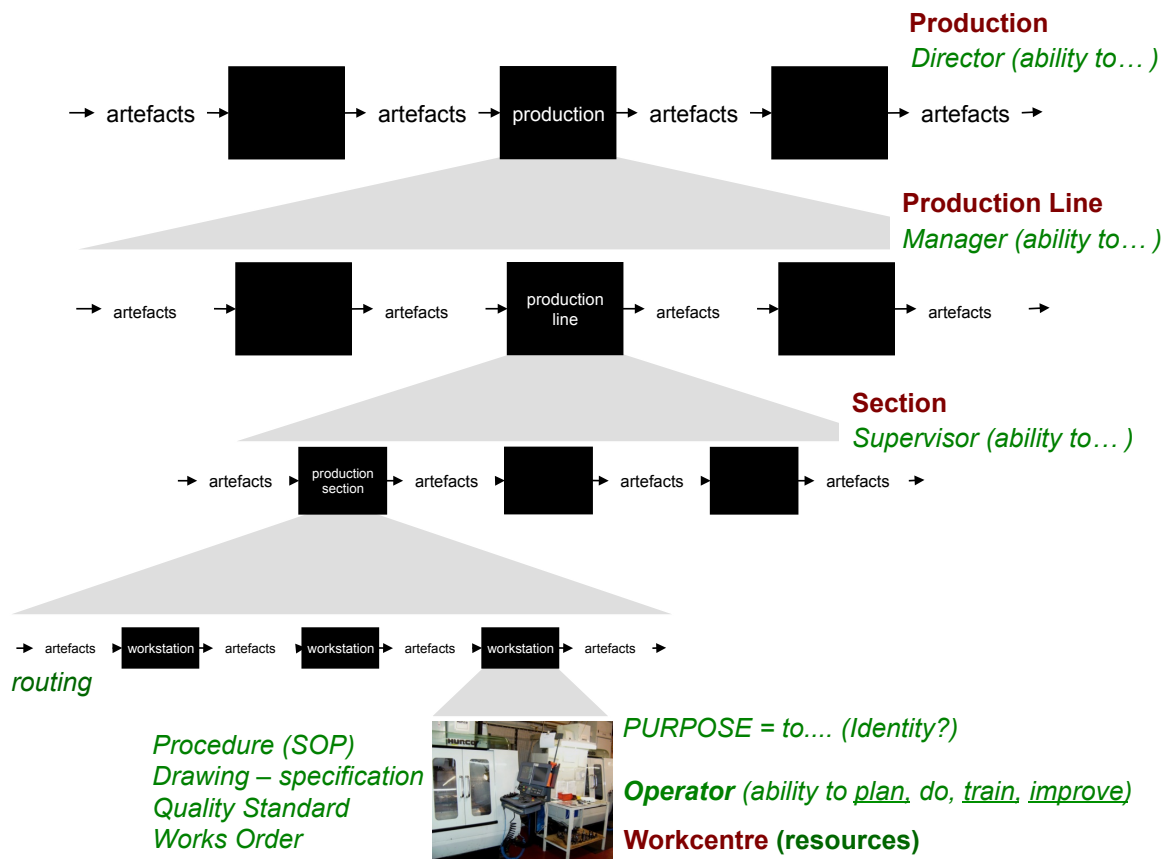


Figure 2 A simple multi-level model of a business engaged in production

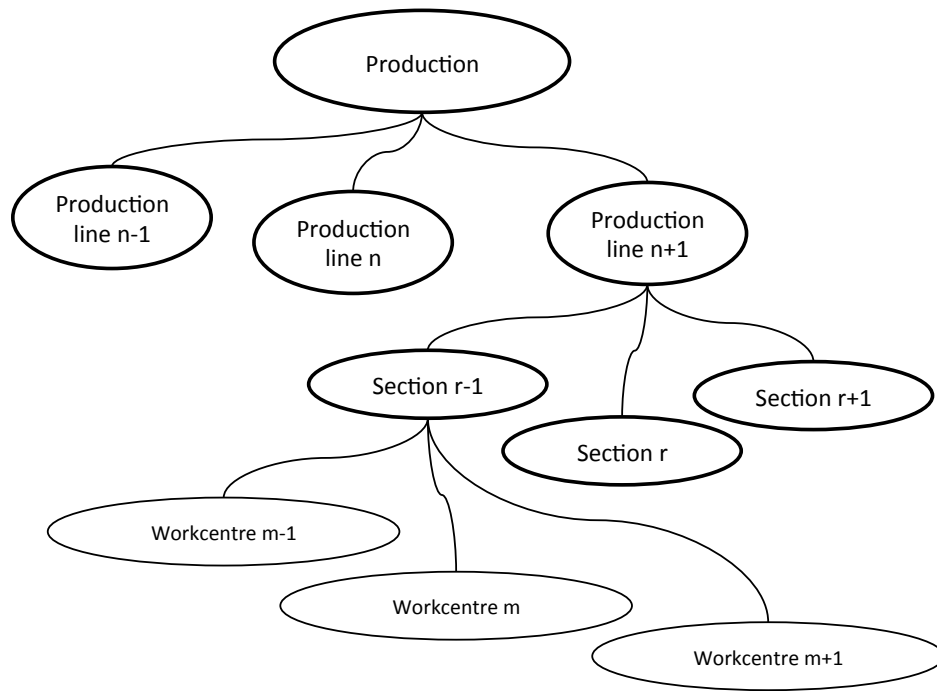


Figure 3 Unfolding the complexity of a business engaged in production

Cases 2: designing a local collaboration tourism group

The second case is a design issue, concerned with the establishment of a local tourism group that would take responsibility for promoting a locality within Dumfries & Galloway (D&G), and developing its tourism offering. An organisation did exist to promote D&G, but this was centred to the east of the county in Dumfries, with Stranraer being over 70 miles to the west, a couple of hours drive. Moreover, as a large county, its different localities had their respective distinct identities (e.g. Machars, Rhins, see Figure 4), creating issues about how distinct localities were to be promoted. At the time of the study, whilst the Machars was actively promoting itself, the Rhins did not have such a profile, with no local business group dedicated to promoting the locality as a destination. A local organisation (The South Rhins Community Development Trust) had been formed, but it was local to the two adjoining parishes of Kirkmaiden and Stoneycirk and was more focused upon the community. One question that was raised was whether a new membership based organisation should be formed, what its geographic scope would be and how it would intermediate between local businesses and regional and national organisations.

The notion of local membership based collaborative groups taking responsibility for promoting and developing the tourism offering is not new. Holiday Mull, representing the

island of Mull, was established in 1977. These groups are autonomous, though there is the issue of alignment of their activities with larger more regional groups or the national tourism organisation, VisitScotland. However, this independence did raise concerns about their legitimacy if there was non-alignment with VisitScotland (Harwood, 2009). The unfolding of the complexity (Figure 5) reveals the meta-levels of Scotland and the UK, and draws attention to the high level of autonomy Scotland has had as a tourism destination relative to the UK. Moreover, it prompts such questions as how integrated local businesses are with higher levels, what are the mechanisms to enable this and whether organisations at the level of D&G are effective for promoting the identity of smaller localities. Moreover, it allows the governance structure of the membership organisation to be evaluated; for example, what is its purpose, how does it co-ordinate the activities of its membership, how does it respond (adapt) to changes in the seasonal nature of the industry. An evaluation of the structural dynamics of a national tourism industry, including the fit of local collaborative tourism groups, using the VSM is presented in Harwood (2009).

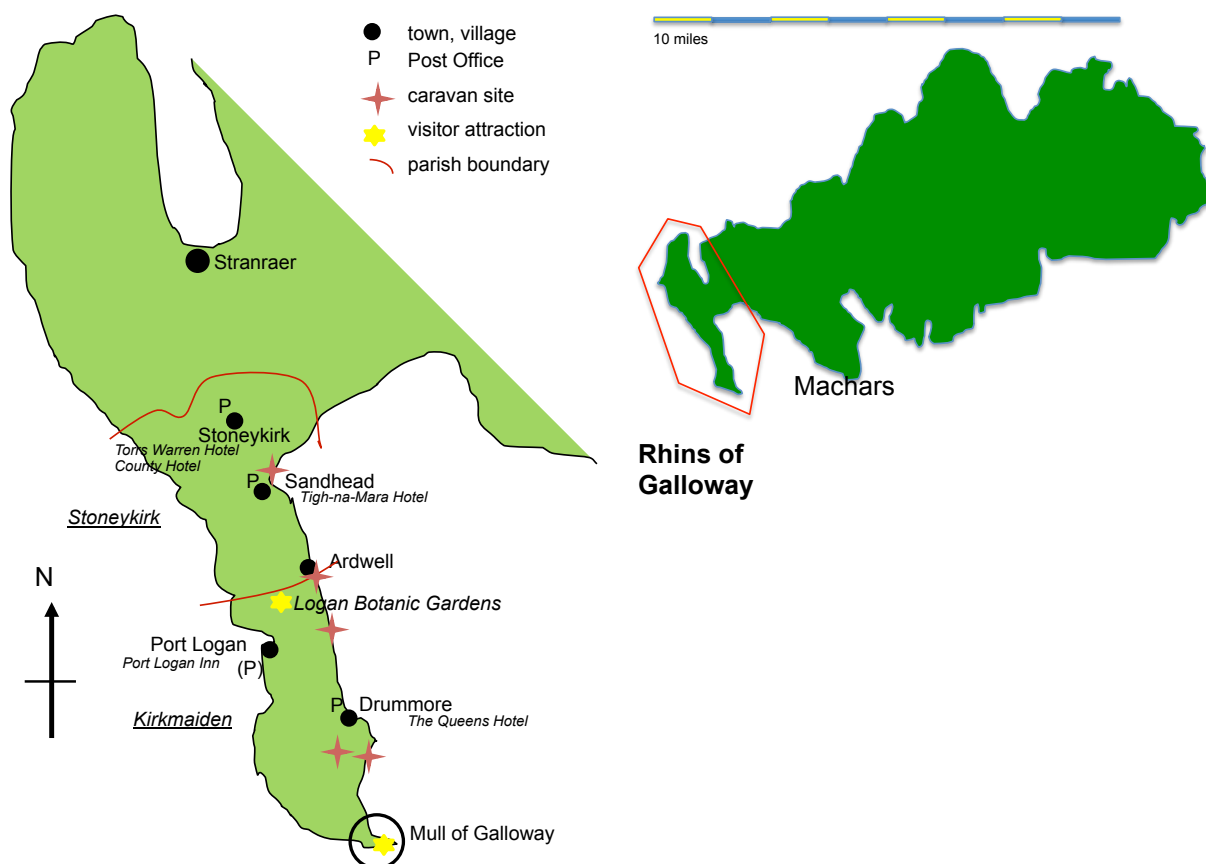


Figure 4 Map of the Rhins of Galloway and its position (red outline) within Dumfries & Galloway, S.W. Scotland

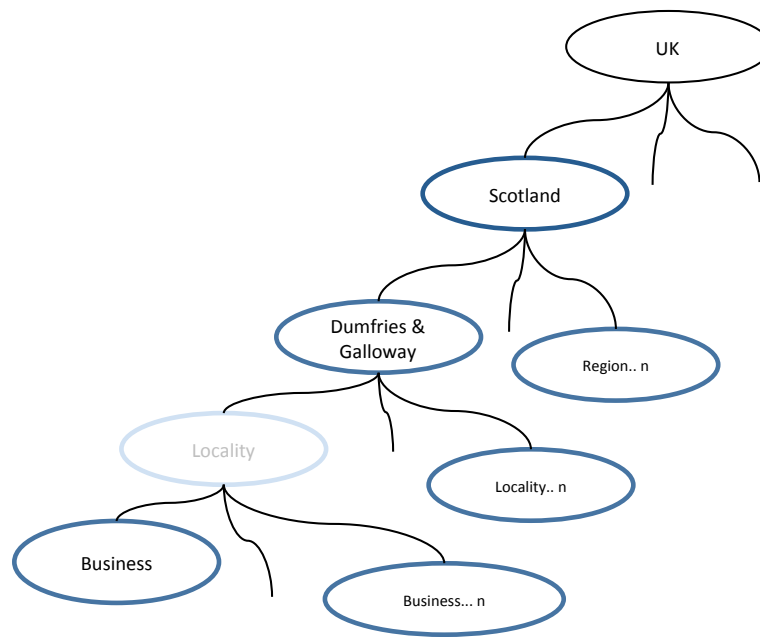


Figure 5 Unfolding the complexity of Scotland as a tourism destination

Conclusion

The VSM is an old and perhaps forgotten model of organisation, which is open to the criticism of presenting a functional view of the organisation (Jackson, 1988). Indeed, irrespective of whether it can be argued that the VSM ignores issues of power, leadership and culture, as a model, it does allow the modelling of multiple levels of organisation, whether in analytical or a design mode. The VSM draws attention to the significance of the everyday names ascribed to entities, to issues of identity as well as to both within-level entities and relations as well as cross-level entities and relations and their cohesion. It draws attention to the notion of self-regulation and by implication the distribution of the discretion and the implications for the other parts of the organisation. It facilitates the asking of pertinent questions about the dynamics of all that constitutes the macro-, meso- and micro-. In light of the debate upon multi-level modelling of organisations then, this is an appropriate time for the VSM to resurface.

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